Space Weather Forecast

Issued on Wednesday, 08 June 2022 at 13:09 Local

This forecast provides a four day assessment of space weather events. The probabilities stated below are for reaching or exceeding the given levels. For more information about space weather impacts please see the Met Office Space Weather Scales https://www.metoffice.gov.uk/weather/learn-about/space-weather/uk-scales

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Space Weather Forecast Headline: No significant space weather activity is expected.

Analysis of Space Weather Activity over past 24 hours

Solar Activity: Solar activity has been Very Low over the past 24 hours. There are no sunspot regions on the visible disc, although there appears to be a potential new region rotating onto the southeast limb, with a further potential new region nearing the northeast limb. It is too early as yet to assess either of these regions.
No Earth-directed CMEs were observed in the last 24 hours.
Solar Wind / Geomagnetic Activity: The solar wind speeds have been slow, between 300-340 km/s. The Interplanetary Magnetic Field has been mostly weak. The north-south component varied mainly weakly, and has been predominantly southward directed. Geomagnetic activity was Quiet (Kp 1-2).
Energetic Particles / Solar Radiation: No solar radiation storms were observed.

Four-Day Space Weather Forecast Summary

Solar Activity: Solar activity is expected to be Very Low initially. Returning active regions may increase the risk of flares through the period, although the degree to which this occurs is uncertain until these regions can be seen on the visible disc.
Solar Wind / Geomagnetic Activity: The solar wind is currently at background levels. A small and weak positive coronal hole could give faster winds to around 450 km/s on Day 3 (10 June). The proximity of the Solstice means that any geomagnetic response from positive coronal holes at this time of year is likely to be muted.
As such, geomagnetic activity is expected to be mostly Quiet through this period. However, there is a risk of Unsettled to Active (Kp 3-4) intervals on Day 3 if we see any fast wind effects from the weak coronal hole.
Energetic Particles / Solar Radiation: No solar radiation storms are expected.

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Geomagnetic Storms:

Geo-Magnetic Storm	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC)	Day 2 (00-24 UTC)	Day 3 (00-24 UTC)	Day 4 (00-24 UTC)
Probability (Exceedance)			(%)	(%)	(%)	(%)
Minor or Moderate	G1 to G2	No	1	1	1	1
Strong	G3	No	1	1	1	1
Severe	G4	No	1	1	1	1
Extreme	G5	No	1	1	1	1

Radio Blackouts - X Ray Flares:

X Ray Flares	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC)	Day 2 (00-24 UTC)	Day 3 (00-24 UTC)	Day 4 (00-24 UTC)
Probability			(%)	(%)	(%)	(%)
Active	R1-R2 M Class	No	1	2	5	5
Very Active	R3 to R5 X	No	1	1	1	1

Solar Radiation Storms - (High Energy Protons):

Radiation Storms	Level (cm^{-2} sr^{-1} s^{-1})	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC)	Day 2 (00-24 UTC)	Day 3 (00-24 UTC)	Day 4 (00-24 UTC)
Probability (Exceedance)			(%)	(%)	(%)	(%)
Active	≥ S1	No	1	1	1	1
Very Active	≥ S3 *	No	1	1	1	1

* S3 ≥ 10 MeV ≥ 1000 pfu and / or ≥ 50 MeV ≥ 10 pfu. (pfu = $cm^{-2}sr^{-1}s^{-1}$)

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